

**ABSTRACT OF THE DISCLOSURE**

Methods of screening candidate drugs for the treatment of Alzheimer's disease  
5 are provided. Employing tissue slices of mutant mouse hippocampal cells having an  
extra copy of a mutant form of the presenilin-1 gene, it is found that these cells have  
enhanced potentiation to tetanic stimuli. By subjecting both wild-type and mutant  
hippocampal cells to tetanic stimuli in the presence of a candidate drug, reduction of  
the enhanced potentiation of the mutant cells without significant change in the  
10 potentiation of the wild-type cells indicates a successful candidate.